IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In Re Application of:	)	
	)	Confirmation No. 5451
MARSHALL THOMAS DEPUE, et al.	)	
	)	Attorney Docket: 10030189-1
Serial No.: 10/612,655	)	
	)	Examiner: William Boddie
Filed: July 2, 2003	)	
	)	Group Art Unit: 2629
For: FUEL CELL POWERED OPTICAL NAVIGATION DEVICE	)	

REPLY BRIEF

Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This Reply Brief is submitted in response to the Examiner's Answer mailed December 18, 2006, and addresses specific statements made by the Examiner in his Answer.

REMARKS

Regarding the cited art, Derocher et al. (U.S. Patent No. 6,476,795, hereinafter referred to as "Derocher") and Koripella et al. (U.S. Patent No. 6,387,559, hereinafter referred to as "Koripella"), the Examiner states on page 3 of his Answer:

> "Derocher and Koripella are analogous art because they are directed at a similar problem solving area, namely powering handheld electronic devices...."

Similarly, on page 15 of the Examiner's Answer, he states:

> "In this case, Koripella and Derocher are both directed to a similar problem solving area, providing a rechargeable and long lasting power supply to a handheld wireless portable device."

Furthermore, on page 7 of his Answer, the Examiner states the following regarding these references and Peng (U.S. Patent No. 6,686,903, hereinafter referred to as "Peng"):

> "Derocher, Koripella and Peng are all analogous art because they are directed to a similar problem area, namely powering wireless handheld devices."

Appellants respectfully disagree with the Examiner's characterization of the wireless mouse of Derocher or Peng (as well as the optical mouse of Appellants' invention) as a "handheld electronic device", a "handheld wireless portable device", or a "wireless handheld device". It is well-known and widely accepted that a "handheld" (wireless or portable) device is generally something that is **used or operated while it is held in a user's hand**, such as a cell phone (including the cell phone of Koripella), a PDA, a handheld video game, or the like. An optical mouse is **not** "held" in a user's hand during use; instead, a user's hand **partially covers** the

mouse while it rests on and is navigated along a flat surface such as a mouse pad on a desk. More importantly, an optical mouse is generally categorized by resellers and the like as a "computer accessory", **not** a "handheld device". Thus, Derocher, which is directed to a recharging module for a mouse in a laptop computer, and Koripella, which is directed to fabricating a fuel cell system (and mentions use of the fuel cell system within a portable electronic device such as a cell phone), are **not** both directed to the problem of "powering handheld electronic devices" or "providing a rechargeable and long lasting power supply to a handheld wireless portable device" as claimed by the Examiner. Nor are Derocher, Koripella and Peng (which is directed to a wireless mouse capable of generating and accumulating electrical energy) all directed to the problem of "powering wireless handheld devices" as stated by the Examiner.

Regarding motivation to combine Derocher and Koripella in an attempt to fashion Appellants' invention, the Examiner states on pages 12-13 of his Answer:

> "...In this case, it seems obvious to the Examiner that where one of ordinary skill in the art presented both the Derocher and Koripella patents they would have been motivated to include a fuel cell in the mouse of Derocher. An obvious motivation for this combination would have been to lengthen the time between battery recharges [in the mouse of Derocher].

Appellants respectfully disagree with the Examiner's statements and submit that this is a classic case of the Examiner using hindsight to fashion Appellants' invention using not only the prior art but also the teachings of Appellants' disclosure. While lengthening the time between battery recharges in the mouse of Derocher may seem obvious to the Examiner **in order to fashion Appellants' invention**, there is **absolutely nothing** that would lead one skilled in the art to even consider adding something such as a fuel cell to the mouse of Derocher. In fact, the entire

Derocher reference is directed to recharging the rechargeable batteries of the mouse, and no other possible power source for powering the mouse is even so much as mentioned. Furthermore, **absent the teachings of Appellants' disclosure**, Koripella does not provide anything that would lead a person to believe that its system could be utilized in a computer accessory such as an optical mouse, since cell phones (portable electronic "handheld" devices) and optical mice (computer accessories) are not even in the same category as explained above. Thus, as noted in the Appeal Brief (page 12), instead of providing evidence of a "motivation" to combine prior art references, the Examiner has only put forth a **hypothetical advantage** in doing so, that specifically being the ability to provide the same benefit as Appellants' claimed invention. This is the very definition of improperly using "hindsight" to fashion a claimed invention.

In explaining his "motivation", the Examiner states the following on page 14 of his Answer (emphasis added):

> "Derocher teaches a wireless, optical, rechargeable mouse. Koripella teaches a fuel cell that supplements a rechargeable battery for powering a portable electronic device. **Derocher's battery requires recharging that draws power from an already limited laptop battery.** Thus there is obviously a need for a rechargeable mouse that operates longer in-between charges. A solution, clear to those of ordinary skill in the art, is the inclusion of a fuel cell as taught by Koripella."

Appellants respectfully disagree with the Examiner's statement and would like to point out that the laptop battery is not the **only** power source offered in Derocher for recharging the batteries of the mouse. Specifically, the power source used to recharge the batteries of Derocher's mouse may be "...an AC power, a DC power supply (i.e. car adapter), **or an internal battery**" (Derocher, col. 3, lines 22-24, emphasis added). Alternatively, the mouse may be charged by a "reserve battery",

which is itself recharged by a battery charger [that can draw power from any of the above sources] (Derocher, col. 3, line 64 through col. 4, line 4). There is no mention in Derocher of there being any "problem" with the mouse drawing power from the laptop battery or reserve battery, and therefore this "problem" was not recognized by Derocher and is instead something that the Examiner made up using hindsight knowledge derived from Appellants' disclosure. Thus, regarding the Examiner's statement that "there is obviously a need for a rechargeable mouse that operates longer in-between charges", such a "need" was only obvious to the Examiner after he read Appellants' disclosure.

Finally, on pages 22-23 of the Reply Brief, the Examiner, states:

> "Additionally, the Examiner fails to see why a mouse of Derocher including a fuel cell would not be able to function as disclosed by Derocher. Clearly Koripella's embodiment utilizing a cell phone having a rechargeable battery still functions. Therefore there is no reason to believe that Derocher's mouse would not be able to still recharge as described when a fuel cell is used to augment the power supply of the mouse."

Appellants explain in their specification, on page 5 thereof (lines 7-24), when it is or is not proper to use a fuel cell in a mouse (emphasis added):

> "Rechargeable battery 245, such as a 20 g lithium polymer battery operating at 3 volt, provides about 3 W hours of power. Rechargeable battery 245 directly powers wireless optical mouse 200 and is recharged by fuel cell stack 270 from which power is preferentially drawn at a constant rate. Fuel cell output is limited by the exchange membrane ionic resistance, by the crossover time of the reactants across the ion exchange membrane positioned between cathode side 180 and anode side 160 of fuel cell stack 120 and mass transport of reactants to the electrodes. A narrow peak power operating window results. **Therefore, a fuel cell is typically not good for applications requiring burst power.** Rechargeable battery 245 is typically used in embodiments requiring high frame rates (see discussion below) as is the case for an optical mouse for videogame applications. Here it is important for wireless optical mouse 200 to respond to rapid movement. For lower frame rates, a capacitor (not shown) may be substituted for rechargeable battery 245. For example, if wireless optical mouse 200 has a burst power requirement of 100 mW but burst power is required for only 10%

> of the operating time of wireless mouse 200, typical for a lower power optical mouse with relatively low frame rate, the use of a capacitor on the order of 1μF allows fuel cell stack 120 to operate at a constant power output that is about 10% of the burst power requirement of 100 mW."

Specifically, Appellants explain that, for some mouse applications, rechargeable batteries or a capacitor must be utilized instead of or in conjunction with a fuel cell. Thus, the fact that "Koripella's embodiment utilizing a **cell phone** having a rechargeable battery still functions" is meaningless since a cell phone operates much differently than an optical mouse and has vastly different applications from those of an optical mouse. Simply stated, assuming that there was proper motivation to do so (which there isn't, as explained above and in the Appeal Brief), one cannot simply add a fuel cell to Derocher's system and expect it to still work as stated by Derocher. In doing so, it would leave many questions unanswered. For example, would the added fuel cell recharge the batteries of Derocher? If so, then the need for a battery charger as taught by Derocher would no longer be present, or a battery charger would somehow need to be connected to the fuel cell. Also, if a fuel cell was added to the mouse of Derocher, would the mouse draw power sometimes from the fuel cell and sometimes from the rechargeable batteries (or another source of power such as a capacitor) as taught by Appellants? If so, when? These questions cannot be gleaned from the prior art references alone, nor can they be answered using "common knowledge" by those skilled in the art without a considerable amount of research and invention. Instead, such issues are addressed in Appellants' disclosure, which further reinforces Appellants' argument that the Examiner used improper hindsight to fashion his rejection of the claims.

CONCLUSION

For the reasons discussed above and in the Appeal Brief, Appellants believe that the Examiner has not provided a proper *prima facie* obviousness rejection of the pending claims, and these claims are allowable over the cited art. Thus, Appellants urge the Board to reverse the Examiner's rejections of the claims.

Respectfully submitted,

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